



Research Paper No. 2008/79

The Macroeconomic Management of Increased Aid

Policy Lessons from Recent Experience

Shekhar Aiyar,¹ Andrew Berg,²
and Mumtaz Hussain³

September 2008

Abstract

This paper investigates the macroeconomic challenges created by a surge in aid inflows. It develops an analytical framework for examining possible policy responses to increased aid, in terms of *absorption* and *spending* of aid—where the central bank controls absorption through monetary policy and the sale of foreign exchange and the fiscal authority controls spending. Different combinations of absorption and spending lead to different macroeconomic consequences. Evidence from five countries that recently experienced an aid surge (Ethiopia, Ghana, Tanzania, Mozambique and Uganda) shows no support for aid-related real exchange rate appreciation in these countries, but indicates that the *fear* of Dutch disease played an important part in the policy reaction to aid surges. Fiscal and monetary authorities should coordinate their responses to an aid surge, because an uncoordinated response—typically when fiscal authority wants to spend aid while the central bank wants to avoid exchange rate appreciation—can have serious negative macroeconomic consequences.

Keywords: aid, exchange rate, aid absorption, policy

JEL classification: O11, O23, E52, F35

Copyright © UNU-WIDER 2008

¹ Asia and Pacific Department, International Monetary Fund, saiyar@imf.org; ² African Department, International Monetary Fund, email: aberg@imf.org; ³ (corresponding author) European Department, International Monetary Fund, email: mhussain@imf.org

This study is a revised version of the paper presented at the 16-17 June 2006 WIDER development conference on ‘Aid: Principles, Policies, and Performance’, directed by George Mavrotas.

UNU-WIDER gratefully acknowledges the financial contribution to the conference by the Finnish Ministry for Foreign Affairs.

UNU-WIDER also acknowledges the financial contributions to the 2006-07 research programme by the governments of Australia (AusAID), Denmark (Royal Ministry of Foreign Affairs), Norway (Royal Ministry of Foreign Affairs), Sweden (Swedish International Development Cooperation Agency—Sida), and the United Kingdom (Department for International Development—DFID).

ISSN 1810-2611 ISBN 978-92-9230-133-0

Acknowledgements

The authors are grateful to numerous reviewers both in the IMF and outside, including participants at a CERDI seminar in Clermont-Ferrand (France), at the Maputo conference and at the UNU-WIDER conference in Helsinki, for providing valuable input to the paper. The views expressed in this paper, as well as any remaining errors, are those of the authors and do not necessarily represent those of the IMF or IMF policy.

Acronyms

CPI consumer price index

HIPCs heavily indebted poor countries

IMF International Monetary Fund

NEER nominal effective exchange rate

REER real effective exchange rate

RER real exchange rate

The World Institute for Development Economics Research (WIDER) was established by the United Nations University (UNU) as its first research and training centre and started work in Helsinki, Finland in 1985. The Institute undertakes applied research and policy analysis on structural changes affecting the developing and transitional economies, provides a forum for the advocacy of policies leading to robust, equitable and environmentally sustainable growth, and promotes capacity strengthening and training in the field of economic and social policy making. Work is carried out by staff researchers and visiting scholars in Helsinki and through networks of collaborating scholars and institutions around the world.

www.wider.unu.edu

publications@wider.unu.edu

UNU World Institute for Development Economics Research (UNU-WIDER)
Katajanokanlaituri 6 B, 00160 Helsinki, Finland

Typescript prepared by Liisa Roponen at UNU-WIDER

The views expressed in this publication are those of the author(s). Publication does not imply endorsement by the Institute or the United Nations University, nor by the programme/project sponsors, of any of the views expressed.

1 Introduction

The increased focus of the international community on scaling up aid in support of the Millennium Development Goals makes the challenges of using aid effectively a key priority for policymakers. While aid presents an opportunity to reduce poverty and generate sustained growth, the effective use of increased aid also presents challenges. High levels of aid inflows can cause upward pressure on the real exchange rate, to the detriment of the exporting industries that may be critical to long-run growth. Aid inflows can also create problems of fiscal management and debt sustainability, particularly when they are volatile and when they come in the form of debt. An analytical framework that emphasizes the different roles of monetary and fiscal policy is used to analyse key macroeconomic issues in managing large increases in aid. The key issues are:

- Do recipients of aid surges encounter macroeconomic absorptive capacity constraints?
- Do aid surges lead to real exchange rate appreciations that are harmful to the export sector and hence economic growth?
- How should fiscal policy be adapted to aid surges?
- Are aid inflows inflationary, and what is the appropriate monetary and exchange rate policy response?

This paper's contribution to the existing research is twofold.¹ First, it develops a framework to examine the nuts-and-bolts policy questions of direct relevance to macroeconomic policymakers.² Second, it systematically analyses cases in which countries experienced large aid surges, thereby complementing existing research, which is based mainly on cross-country and panel econometric models. The case studies focus on strong performers in terms of institutions and economic policies. The goal is to learn how to help those countries that are well-positioned, institutionally and in terms of the policy framework, to absorb large quantities of aid. The countries covered in this study are Ethiopia, Ghana, Mozambique, Tanzania, and Uganda.

Contrary to the prevailing presumption, the case studies reveal no significant real appreciation accompanying the surge in aid in any of the sample countries.³ Even taking into account simultaneous terms-of-trade shocks in some countries does not explain this unexpected result. However, all the countries in the sample were reluctant to fully absorb the increments in aid through a corresponding rise in net imports. In other words, a considerable part of the aid was used to build international reserves, rather than to transfer resources from donor to recipient country. This finding suggests that a primary concern for not absorbing additional aid was competitiveness, manifested in a

¹ An earlier and more detailed version of this paper is published as an IMF Occasional Paper (Berg et al. 2007). Also see IMF (2005a).

² The absorb-and-spend framework developed at the IMF and presented here and in IMF (2007, 2005a) has been used in a number of subsequent analyses, including Chowdhury and McKinley (2006), Foster and Killick (2006), and Adam et al. (2007).

³ See Rajan and Subramanian (2005) for an analysis of the Dutch disease impact of foreign aid, and a survey of the earlier literature.

reluctance to accept real appreciation of the exchange rate. Thus, the study finds no evidence of actual Dutch disease, but there is ample evidence that the fear of real exchange rate appreciation played an important part in the policy reaction to aid.

While the central banks held a substantial part of the aid in reserves, the fiscal authorities often tried to spend aid. Public expenditures were increased using the local currency obtained from selling the aid dollars to the central bank. In effect, such a policy is very similar to a domestically financed fiscal expansion, except that reserves are now larger. It leads to identical outcomes, such as a surge in the money supply, and a consequent need to decide between inflation, on the one hand, and crowding out the private sector through the sale of treasury bills, on the other. The paper concludes that it is crucial for fiscal and monetary authorities to coordinate their responses to an aid surge. An uncoordinated response—typically arising because the fiscal authority wants to spend aid while the monetary authority wants to avoid exchange rate appreciation—can have unintended negative macroeconomic consequences.

2 Macroeconomic framework for analysis of increases in aid Inflows

The macroeconomic impact of aid depends critically on the policy response to aid—particularly the interaction of fiscal policy with monetary and exchange rate policy. To understand the importance of the response to aid, it is useful to introduce two related but distinct concepts: absorption and spending.

Absorption is defined as the extent to which the current account deficit excluding aid widens in response to an increase in aid inflows. This measure captures the quantity of net imports financed by an increment in aid, which represents the real transfer of resources enabled by aid. Absorption captures both the direct and indirect increase in imports financed by aid, i.e., direct purchases of imports by the government, as well as second-round increases in net imports resulting from aid-driven increases in public or private expenditures. This concept of absorption can be defined and understood in terms of the balance of payments identity:

$$\text{Aid inflows} = \Delta \text{Reserves} - \text{Current account excluding aid} - \text{Capital account excluding aid}$$

Thus, scaling up of aid can serve some combination of three purposes: an increase in the reserve accumulation, an increase in capital outflows, and an increase in the non-aid current account deficit. The rate of absorption of an increase in aid is then defined as the change (Δ) in the current account (excluding aid) deficit as a share of the change in aid inflows:

$$\text{Absorption of aid} = \Delta(\text{Non-aid current account deficit})/\Delta \text{Aid}$$

For a given fiscal policy, absorption is controlled by the central bank, through its decision about how much of the foreign exchange associated with aid to sell, and through its interest rates policy, which influences the demand for private imports via aggregate demand.

Spending of aid is defined as the widening in the government fiscal deficit net of aid that accompanies an increment in aid:

$$\text{Spending of aid} = \Delta(\text{Total expenditures} - \text{Domestic revenue})/\Delta\text{Aid}$$

Spending captures the extent to which the government uses aid to finance an increase in expenditures or a reduction in taxation. Even if the aid comes tied to particular expenditures, governments can choose whether or not to increase the overall fiscal deficit as aid increases. The aid-related increases in expenditures could be on imports or domestically-produced goods and services. Analysing spending is important because of the natural focus on the budget as a policy variable, and also because of the importance of tensions between the fiscal policy response to aid and broader macroeconomic objectives with respect to the exchange rate and inflation.

Absorption and spending are distinct, though related, concepts and policy choices.⁴ If aid comes in kind, or if the government spends aid dollars directly on imports, spending and absorption are equivalent, and there is no significant impact on the exchange rate, price level, and interest rates. This paper, however, concentrates on the more difficult and relevant case where aid dollars are given to the government, which immediately sells them to the central bank. Subsequently, the government decides how much of the local currency counterpart to spend on domestic projects, while the central bank decides how much of the aid-related foreign exchange to sell on the market; and, in general, spending differs from absorption.

The four basic combinations of absorption and spending are described below, together with a discussion of the macroeconomic implications of each.

- (i) *Aid absorbed and spent* is the case most frequently assumed in discussions of the impact of aid inflows (e.g., Bevan 2005). The government spends the aid increment and foreign exchange is sold by the central bank and absorbed by the economy via a widening of the current account deficit. The fiscal deficit is larger, but financed by higher aid. Spending and absorption of aid allows an increase in government spending by redeploying resources that had been devoted to the traded goods sector. The aid dollars fill the foreign exchange gap that would result from transferring resources to aid-financed projects. Some real exchange rate appreciation may be necessary and indeed appropriate in response to a sustained higher level of aid. This is because some combination of exchange rate appreciation and (if there is excess capacity) increased aggregate demand is necessary to generate the increased net imports that aid allows.

Of course, output may not be fixed and recipient economy may have significant unemployed resources. In such a situation, a fiscal expansion may well increase output, both in the short run through the effects of increased spending on

⁴ The distinction between absorption and spending, in the terminology used in this paper, is one of the central issues associated with the ‘transfer problem’ discussed in Keynes (1929). Keynes was concerned with Germany’s problems in generating current account surpluses to pay reparations after the First World War. He argued that for the fiscal authorities to accumulate the local currency counterpart to the required transfers was only part of the transfer problem—the other part being generating the net exports and therefore the required foreign exchange. See Milesi-Ferreti and Lane (2004) for a recent general discussion of the transfer problem and the real exchange rate.

aggregate demand and in the long run through the increase in the capital stock. To the extent that output can be increased through a fiscal expansion without leading to a deterioration in the current account, however, these increases in aggregate demand and investment could have been undertaken without the aid flows. Aid absorption refers to the use of aid to finance changes in the current account deficit associated with aid-related increases in aggregate demand, investment, and output in general.

The degree of exchange rate appreciation required to absorb the aid will depend, in general, on the structural response of the economy and the extent to which aid directly finances imports. For example, real appreciation would be higher to the extent that aid inflows finance expenditures on nontradable goods rather than directly financing imports. On the other hand, if higher incomes feed strongly into higher import demand, and if the supply of nontraded goods responds strongly to the increase in their relative price, the real appreciation would be limited. In economies with the potential for a quick supply response, the additional demand for nontradable goods could induce additional employment and production, with little increase in the price level and limited real appreciation. In the longer run, investments that increase productivity in the nontradable sector could also reduce or even eliminate the real exchange rate appreciation.

The mechanism for real appreciation would vary depending on the exchange rate regime. In a pure float, the central bank would sell the foreign exchange associated with the aid, causing a nominal (and real) exchange rate appreciation. In a peg, the real appreciation would take place through a period of inflation, with the increase in government expenditure accommodated by the central bank. The increase in aggregate demand and real appreciation would again increase net import demand, leading the central bank to sell foreign exchange in defence of the peg.

- (ii) *Aid neither absorbed nor spent* is the opposite extreme case. Increased aid inflows are used to build international reserves, and the government neither increases its expenditures nor lowers taxes. In this case there is no expansionary impact on aggregate demand, and no pressure on the exchange rate or prices. However, not spending the aid may be infeasible over a longer time period, as donors need to account for how their assistance has been used. Of course, money is fungible, so that in principle not spending aid dollars is compatible with undertaking the projects favoured by donors, while cutting back on other budgetary expenditures. In practice, the extent to which this is possible would depend on the room available—both fiscally and politically—to cut expenditures in other areas.

Constraints on sectoral and administrative capacity are also likely to affect spending and absorption decisions—particularly in the short run and at the subnational level. With the scaling up of aid, the share of priority public expenditure assigned to subnational governments is increasing. However, the capacity of these governments to design and implement priority programmes and to ensure that scaled-up funds reach the intended users is weak in many low-income countries. In these circumstances, some countries could decide to

save part of the aid flows to finance higher public expenditures in the future, when capacity constraints are less severe.

- (iii) *Aid absorbed but not spent.* In this case, the government neither increases its expenditures nor lowers taxes after an aid surge, but the central bank sells aid dollars to finance an increase in net imports. Such a policy response could be appropriate for achieving stabilization or retiring large domestic public debt. Aid surge can be used to reduce inflation in countries that have not yet achieved stabilization. In such a case, the authorities can sell the foreign exchange associated with increased aid inflows to sterilize the monetary impact of domestically-financed fiscal deficits. The result would typically be slower monetary growth, a more appreciated real exchange rate, and lower inflation. Aggregate demand may increase as the inflation tax declines, with a corresponding increase in private consumption and investment. The deterioration of the trade balance that often accompanies such a stabilization programme is financed by the aid inflow (Buffie et al. 2004).

Similarly, in countries with large domestic public debt, the government could use the proceeds from aid to reduce the stock of domestic public debt. This would tend to result in increased private consumption and investment, which would raise net imports through the indirect effect of higher private after-tax income on import demand. The extra foreign exchange sold by the central bank would finance this increased demand for net imports. Whether the strategy of retiring public debt using aid is appropriate depends partly on whether lower interest rates would translate into higher domestic investment or consumption. If there are no good private investment opportunities, for example, an increase in credit to the private sector could result in private capital outflows or a buildup of excess commercial bank reserves at the central bank. In addition, as with the neither-absorb-nor-spend strategy, donors' needs to account for the use of their assistance may make it difficult to sustain a no-spending approach.

- (iv) *Aid spent but not absorbed* is a situation when the fiscal deficit, net of aid, increases with the aid surge, but the authorities do not sell the foreign exchange required to finance additional net imports. The macroeconomic effects of such a fiscal expansion are similar to increasing government expenditures in the absence of aid, except that international reserves are higher. The increased deficits inject money into the economy.

In this case, the aid does not serve to support the fiscal expansion. A transfer of real resources to the recipient country occurs only if aid finances additional net imports. Aid also serves as a way for the government to finance its domestic expenditures, as an alternative to domestic tax revenue or borrowing, either from the public or from the central bank. It may seem, therefore, that the financing of domestic expenditures, such as the hiring of nurses, is an alternative use for aid, in addition to imports. But this approach to the function of aid is misleading; after all, the government could always simply borrow from the central bank (i.e., print money) to finance increased domestic expenditures. Rather, the purpose of the aid is to provide the foreign exchange required to satisfy the increased demand for foreign currency resulting from higher import demand.

In this case, absent foreign exchange sales to mop up the additional liquidity, the monetary policy options are the same as in the case of any domestically-financed fiscal expansion. One option is to allow the money supply to increase. This is essentially monetizing the fiscal expansion and would tend to be inflationary. Without foreign exchange sales, the nominal exchange rate will tend to depreciate as well, with a larger supply of domestic currency pushing up the price of foreign exchange. The resulting inflation tax helps contain absorption by transferring resources from the private sector. If, alternatively, the authorities resist nominal exchange rate depreciations, then the resulting inflation would generate a real appreciation, the demand for imports would eventually increase, and the supply of exports would decrease. Provided that foreign exchange was eventually sold to satisfy this demand for net imports, the foreign exchange sales would have a sterilizing impact and dampen inflation. With some delay, then, the aid would be used and absorbed. Although this strategy has the advantage that aid is eventually absorbed, the period of inflation may carry costs of its own, especially in countries with a history of high inflation.

Another response is to sterilize the fiscally-driven monetary expansion through the issuance of domestic securities. This strategy would tend to raise interest rates and crowd out private investment. In effect, there is a switch from private investment to government consumption or investment. This strategy is likely to be particularly difficult and costly in countries with thin financial markets. Moreover, depending on how open capital account is, such a strategy can also be self-defeating because higher domestic interest rate may attract international capital flows and appreciate the currency.

In this spent-but-not-absorbed case, the net effect on the real exchange rate will depend on a variety of factors. The fiscal expansion tends to raise demand for nontraded goods, causing an appreciation; on the other hand, it increases import demand and lowers export supply, pushing the exchange rate towards depreciation. The net effect depends, *inter alia*, on the price and income elasticity of the country's export supply and import demand. In addition, the central bank's resistance to absorption creates pressures for real depreciation. In a float, aid-related liquidity injections will tend to depreciate the nominal and, in the short run, the real exchange rate. Over time, higher inflation and the associated inflation tax will reduce private demand and lower the real exchange rate and absorption. Alternatively, sterilization through the sale of securities will also depress private demand and hence the real exchange rate and absorption. In a peg, only the sterilization channel operates.

Which of these four policy responses is best in the face of a surge in aid depends on many factors, including the level of official reserves, the existing debt burden, the current level of inflation, and the degree of aid volatility. For specific situations, some responses are more promising than others. For example, *to neither spend nor absorb* may be an appropriate short-run strategy where aid inflows are very volatile or international reserves are very low.⁵ Similarly, *to absorb but not spend* the aid might be

⁵ Bulir and Hamann (2003, 2006) find that aid continues to be volatile, that aid commitments consistently exceed disbursements, and that aid disbursements are generally procyclical. Arellano et al (2005) indicates that aid volatility can be very costly in welfare terms. Prati and Tressel (2006) construct a theoretical model to examine the optimal pattern of absorption.

an appropriate response if inflation is too high or domestic debt is too large. However, the most appropriate response under ‘normal’ circumstances would be *to spend and absorb* the additional aid. This is the only case where there is a real resource transfer through an aid-financed increase in net imports, and a corresponding increase in public expenditures.

3 Findings from country studies

The headline measure of aid is ‘net aid inflows’ because it best captures the actual inflows of foreign exchange and hence the scale of the macroeconomic challenge.⁶ All the countries in the sample experienced a surge in net aid in recent years. The surge in net aid ranged from an average of 2 per cent of GDP in Tanzania to an average of 8 per cent of GDP in Ethiopia. Except in Ghana, the surge in aid was persistent, as aid inflows remained substantially higher than in the pre-surge period. Net budgetary aid usually differs from net aid to the economy, for example, because some aid is channelled directly to the private sector and spent on projects outside the government budget. In this sample, however, the two aid measures behave similarly; the surge in net budgetary aid ranged from an average of 3 per cent of GDP (Uganda) to 6 per cent of GDP (Ethiopia). When reviewed yearly to date, the aid surge was gradual and steady in Tanzania and Uganda, but was more volatile in the other three cases.

Recently, there is a clear shift from project aid to direct budget support. Since the inception of the country-owned poverty reduction strategy approach in 1999, donors have been increasingly willing to channel their assistance to the recipient country’s general budget. This eases administrative and institutional constraints in recipient economies, and gives recipient countries more flexibility in spending the aid.

3.1 Real exchange rate and Dutch disease

There was no sign of Dutch disease in the sense that real exchange rates in the sample did not appreciate during the aid surges (Table 1). Except for Ghana, there is typically a depreciation of the real effective exchange rate during the years in which aid inflows surged.⁷ A real depreciation in the face of surging aid inflows may indicate (i) structural features of the economy such as a rapid supply response to aid expenditures or high import propensities, though this would tend to mitigate the appreciation rather than cause a depreciation; (ii) a fiscal and monetary policy stance that leans against real appreciation; or (iii) other exogenous events, notably a negative terms-of-trade shock. Subsequent sections consider the first two explanations. With respect to the latter, two countries in the sample, Ethiopia and Uganda, were hit by significant negative terms-of-trade shocks during the aid-surge period. However, even in these cases the incremental

⁶ Net aid is gross aid plus debt relief, net of amortization, interest payments on public debt and arrears clearance; gross aid is the sum of grants and loans, including both programme and project financing.

⁷ The reported real effective exchange rate (REER) is based on nominal exchange rates and consumer prices (CPI) in the target country and its trade partners. Lack of data prevents supplementing these indices with the REER measured by unit labour costs, or as the ratio between nontradables and tradables prices.

aid flows were much larger than the scale of the terms-of-trade shocks. There is also no case where a significant change in private inflows counteracts the pattern of aid inflows.

Consistent with real depreciation, export performance was strong in most of the sample, especially in Mozambique and Tanzania. In Ghana too, export performance was strong despite a stable real exchange rate. In both countries that were affected by the decline in coffee prices, real depreciation helped export performance. In particular, nontraditional exports grew strongly, and increased as a proportion of total exports, enabling robust export growth in Ethiopia and moderating the decline in exports in Uganda.

Table 1
Real effective exchange rate (REER)
(Per cent change over previous year, unless otherwise specified)

	Pre-aid surge average	Average for aid-surge period
Ethiopia	1999-2000	2001-03
REER (depreciation -)	-2.0	-2.1
NEER (depreciation -)	-5.0	-1.5
RER (bilateral with dollar)	-5.7	-1.9
Terms of trade	-18.3	-4.1
Exports	-9.6	-0.1
Nontraditional exports/exports (% ratio)	44.0	63.5
Ghana	1999-2000	2001-03
REER (depreciation -)	-17.5	0.5
NEER (depreciation -)	-27.8	-17.8
RER (bilateral with dollar)	-12.0	-6.6
Terms of trade	-12.7	9.7
Exports	-3.8	8.9
Nontraditional exports/exports (%)	30.2	33.0
Mozambique	1998-99	2000-02
REER (depreciation -)	0.0	-6.4
NEER (depreciation -)	1.6	-14.1
RER (bilateral with dollar)	-5.0	-11.1
Terms of trade	-8.8	1.2
Exports	11.2	39.5
Nontraditional exports/exports (%)	NA	NA
Tanzania	1998-99	2000-04
REER (depreciation -)	-2.3	-9.8
NEER (depreciation -)	6.3	-8.7
RER (bilateral with dollar)	3.5	-6.1
Terms of trade	3.3	-4.1
Exports	-17.3	16.1
Nontraditional exports/exports (%)	41.3	74.7
Uganda	1999-2000	2001-03
REER (depreciation -)	-6.6	-6.3
NEER (depreciation -)	-8.6	-5.8
RER (bilateral with dollar)	-12.0	-6.6
Terms of trade	-14.0	-3.6
Exports	1.1	4.0
Nontraditional exports/exports (%)	51.4	78.9

Note: REER = real effective exchange rate;
NEER = nominal effective exchange rate;
RER = real exchange rate.

3.2 Was incremental aid absorbed?

In general, country authorities were reluctant to fully absorb the incremental aid, as evident from small change in the non-aid current account deficit compared to the size of aid surge in the same period (Table 2). Only in Mozambique, absorption was over half the incremental aid inflow. On the other hand, in Tanzania and Ghana, the non-aid current account actually improved by 2 and 10 percentage points of GDP, respectively, implying that the incremental aid was not absorbed. In all countries, the aid surge increased the rate of reserve accumulation, which is consistent with the lack of the real exchange rate appreciation following the surge in aid inflows.

In all countries, part of the aid increment was lost through reductions in the rate of capital inflow. In Ghana and Tanzania, the deterioration in the capital account excluding aid was either comparable to or exceeded the entire increment in the aid inflow.⁸ It

Table 2
Allocation of incremental net aid: absorbed or accumulation as reserves
(annual averages in % of GDP)

	Pre-aid surge average	Aid-surge period average	Difference	Incremental aid absorbed? ¹
Ethiopia	1999-2000	2001-03		
Net aid inflows	5.3	13.3	8.0	
Non-aid current account balance	-9.2	-10.8	-1.6	Partly absorbed
Non-aid capital account balance	2.0	1.3	-0.7	20%
Change in reserves (increase -)	1.9	-3.8	-5.7	
Ghana	1999-2000	2001-03		
Net aid inflows	1.3	6.8	5.5	
Non-aid current account balance	-13.4	-3.4	10.0	Not absorbed
Non-aid capital account balance	9.9	2.1	-7.8	0%
Change in reserves (increase -)	2.2	-5.4	-7.6	
Mozambique	1998-99	2000-02		
Net aid inflows	11.5	17.4	5.9	
Non-aid current account balance	-19.7	-23.6	-3.9	Mostly absorbed
Non-aid capital account balance	8.7	8.3	-0.4	66%
Change in reserves (increase -)	-0.5	-2.1	-1.7	
Tanzania	1998-99	2000-04		
Net aid inflows	5.6	7.8	2.2	
Non-aid current account balance	-9.2	-6.8	2.3	Not absorbed
Non-aid capital account balance	4.1	1.7	-2.4	0%
Change in reserves (increase -)	-0.6	-2.7	-2.2	
Uganda	1999-2000	2001-03		
Net aid inflows	8.9	13.6	4.7	
Non-aid current account balance	-10.1	-11.4	-1.3	Partly absorbed
Non-aid capital account balance	1.6	-1.1	-2.8	27%
Change in reserves (increase -)	-0.4	-1.1	-0.7	

Note: Errors and omissions are included in the capital account;

¹ Non-aid current account deterioration as a per cent of incremental aid inflow is truncated at 0 and 100.

Source: IMF staff reports.

⁸ In some countries, large errors and omissions in the balance of payments accounts could be partly responsible for measured fluctuations in the capital account.

contradicts some recent studies (e.g., Buffie et al. 2004) that argue additional aid helps reduce seigniorage and hence expected inflation, and, thereby, may lead to domestic agents substituting foreign assets with domestic assets, which would appear in the balance of payments as a capital inflow. Were the reductions in capital inflows in Ghana, Tanzania, and Uganda a result of the aid surge itself? If so, the aid surges did not serve their intended purpose of promoting absorption. Aid inflows that trigger capital outflows weaken the link between central bank sales of foreign exchange and absorption, because a (possibly volatile and unpredictable) part of the foreign exchange may leave the country through private capital account transactions.

Some short-run movements in the non-aid capital account could reflect lags between foreign exchange being made available for absorption and the actual increase in imports that comprises absorption. For example, consider a case in which government expenditures raise wages, which then increase the workers' demand for imports. However, when workers purchase dollars from the central bank, they do not immediately spend them on imports, but in the first instance, deposit them in dollar accounts held with domestic commercial banks. This would count as a deterioration in the non-aid capital account due to an increase in commercial banks' net foreign assets. Subsequently, when they spend the dollars on imports, there would be a corresponding improvement in the non-aid capital account. However, this would not seem to be an adequate explanation for the more sustained changes observed in the sample. Further research is needed to identify the direction of causation between the changes in aid and the changes in capital flows, and also to identify the appropriate counterfactual, which is what would have happened in the absence of aid.

3.3 Was incremental aid spent?

The governments in Mozambique, Tanzania, and Uganda spent most of the additional foreign assistance (Table 3). A variety of factors encouraged these countries to spend the incremental budgetary aid. Because these countries had attained macroeconomic stability in the mid-to-late 1990s before the aid surge, reducing domestic financing of the budget deficit was not a major goal. Neither was retiring domestic public debt a key objective, as these countries had rather low domestic financing of the deficit as well as domestic debt and debt service prior to the aid surge. Furthermore, they had strengthened their expenditure management systems, partly because of the Heavily Indebted Poor Countries (HIPC) Initiative, which helped them spend most of the incremental aid that they received as programme assistance. To the extent that these countries spent the aid increments, the additional spending was concentrated on capital and poverty-reducing expenditures.

The governments in Ghana and Ethiopia, however, spent very little of the incremental aid. These countries had a relatively weak record of macroeconomic stability, and a low level of international reserves before the aid surge, which limited their ability to spend additional aid. As these countries also had relatively high domestic debt and domestic financing of the budget prior to the aid surge, reducing domestic public debt and hence debt service was also a consideration for not spending the additional aid. In Ghana, which experienced highly volatile aid inflows, aid volatility appears to have been a major factor in saving incremental aid in 2003. In Ethiopia, limited administrative capacity and weak institutions following the conflict with Eritrea may have been additional factors.

Table 3
Allocation of incremental net aid: absorbed or accumulation as reserves
(annual averages in % of GDP)

	Pre-aid surge average ¹	Aid-surge average ¹	Difference	Incremental aid spent or not ²
Ethiopia				
Net fiscal aid inflows	5.3	11.2	5.9	
Revenue (excl. grants)	18.0	19.4	1.5	Not spent
Expenditure (excl. external interest)	31.8	32.5	0.7	0%
Overall fiscal balance before aid	-13.8	-13.0	0.8	
Ghana				
Net fiscal aid inflows	1.3	7.3	6.0	
Revenue (excl. grants)	17.1	19.0	1.9	Not spent
Expenditure (excl. external interest)	27.0	29.3	2.3	7%
Overall fiscal balance before aid	-9.9	-10.3	-0.4	
Mozambique				
Net fiscal aid inflows	12.9	17.9	5.0	
Revenue (excl. grants)	12.6	13.9	1.3	Spent
Expenditure (excl. external interest)	26.0	32.7	6.7	100%
Overall fiscal balance before aid	-13.0	-18.5	-5.5	
Tanzania				
Net fiscal aid inflows	4.7	8.6	3.9	
Revenue (excl. grants)	12.1	12.5	0.4	Spent
Expenditure (excl. external interest)	16.7	20.7	4.0	91%
Overall fiscal balance before aid	-4.8	-8.3	-3.5	
Uganda				
Net fiscal aid inflows	9.3	12.5	3.2	
Revenue (excl. grants)	12.6	12.8	0.1	Mostly spent
Expenditure (excl. external interest)	22.2	24.7	2.5	74%
Overall fiscal balance before aid	-9.6	-12.0	-2.4	

Note: ¹ For all countries except Tanzania, 1999-2000 constitute the pre-aid surge period, and 2001-03 the aid-surge period. For Tanzania, 1998-99 is the pre-aid surge period and 2000-04 is the aid-surge period.

² Non-aid current account deterioration as a per cent of incremental aid inflow is truncated at 0 and 100.

Source: IMF staff reports.

Aid volatility also contributed to some governments' choice of not spending the aid increments. There are two broad fiscal responses to aid volatility: adjust expenditures in line with the aid fluctuations, or smooth spending by building up reserves (and government deposits) when aid is up and drawing down these savings when aid shortfalls occur. For example, in Ghana, overall expenditures were relatively unresponsive to aid volatility, and past aid savings as well as additional domestic financing were used to offset shortfalls in budgetary aid. To some extent, the preference to build up official reserves in Ethiopia and Ghana appears to have contributed to saving the incremental aid, particularly in the second aid surge in Ghana in 2003.

Because a government can also spend budget aid indirectly by lowering taxes and transferring aid to the private sector, additional aid could lower revenue collection efforts in recipient countries. Some evidence exists to support this view, though the effect is modest except in countries with relatively high levels of corruption (McGillivray and Morrissey 2001; Gupta et al. 2003). However, contrary to theoretical

Table 4
Policy response to aid surge (in per cent)

	Not spent ¹	Partly spent	Mostly spent	Fully spent
Not absorbed ²	Ghana (0, 7)			Tanzania (0, 91)
Partly absorbed	Ethiopia (20, 0)		Uganda (27, 24)	
Mostly absorbed				Mozambique (66, 100)
Fully absorbed				

Notes: 1 'Spent' variable = non-aid fiscal balance deterioration as per cent of incremental aid inflow. Truncated at 0 and 100. This variable is the second entry within brackets for each country.
2 'Absorb' variable = non-aid current account deterioration as per cent of incremental aid inflow. Truncated at 0 and 100. This variable is the first entry within brackets for each country.

considerations and evidence from other countries, the revenue-to-GDP ratio either improved (in Ethiopia, Ghana, and Mozambique) or remained largely unchanged (in Tanzania and Uganda). For the latter cases, one can argue that additional fiscal aid might have reduced the incentives for aid recipients to strengthen revenue efforts, as total revenues stagnated below 15 per cent of GDP.⁹

Surprisingly, a full *absorb-and-spend response* is not observed in any of the sample countries (Table 4). Two cases (Ethiopia and Ghana) adopted a 'neither absorb nor spend' response to the aid surge. A number of related but distinct factors seemed to underlie this response. First, both countries went into the aid-surge period with a precariously low level of international reserves and a need to establish macroeconomic stability. Hence, building sufficient import coverage was one motive for accumulating the aid. Second, aid volatility probably played a role in determining absorption behaviour in some years. For example, in 2003, when aid surged again in Ghana after collapsing the previous year, part of the motivation for the don't-absorb-don't-spend strategy was to protect against excessive fiscal tightening in the event of a future reduction in aid inflows. Third, nonabsorption may have been governed by a desire to avoid appreciation and preserve international competitiveness and, when coupled with a policy of not increasing government expenditures, to curb inflation (in Ghana's case) or to keep inflation in check (in Ethiopia's case).

The remaining three countries (Mozambique, Tanzania, and Uganda) spent the incremental aid without fully absorbing it. The dominant factor behind this response appears to have been a desire to preserve international competitiveness, manifested in an unwillingness to see the nominal or real exchange rate appreciate. Thus, the central

⁹ Of course, in the absence of a counterfactual, it is difficult to gauge whether revenue effort was harmed by aid. One indicator, however, is provided by revenue targets under the IMF programmes. In general these targets were met by most countries in the sample for most periods. The exceptions were Ethiopia and Mozambique, which missed several quarterly targets on government revenue. However, these episodes did not appear to be the result of moral hazard arising from increased aid inflows. In Ethiopia, the 2004 ex-post assessment argues that the revenue targets were overly ambitious given the pace of structural adjustment in the country. In Mozambique, these episodes were more attributable to a drop in excise and import taxes to offset an increase in world oil prices.

banks of each country accumulated international reserves throughout the aid-surge period, despite a relatively comfortable level of import coverage. This still begs the question of why, in the face of the desire to avoid appreciation, the aid was spent at all? One explanation may be that political pressures make it difficult to resist spending aid money. For example, donors may object to having the aid they provide simply accumulated in government deposits at the central bank. Indeed, loans for projects could require a certain amount of domestic expenditures every year, at the risk of being stopped altogether.

These cases illustrate the risk that policies on spending aid inflows may be inconsistent with policies on exchange rate and monetary management of these same inflows. This may be partly because the link between these two sets of issues may not be fully understood by all the relevant policymakers. It may also be because institutional responsibilities for these two sets of issues are separated. Fiscal authorities and donors will find it entirely appropriate that aid inflows to the budget be spent. Central bank officials, on the other hand, may be more concerned about implications for the real exchange rate and the export sector. A spend-but-don't-absorb response may be an unfortunate outcome that neither party fully desires.

3.4 Monetary impact of aid and policy response

On the basis of spending and absorption of aid, two main groups of countries can be discerned: (i) countries where the aid impact was limited because only a small part of it (if any) was either absorbed or spent (Ethiopia, Ghana); and (ii) countries where spending of aid exceeded absorption, resulting in an injection of domestic liquidity and creating upward pressure on prices (Mozambique, Tanzania, and Uganda). These patterns of absorption and spending defined the challenge for monetary policy in response to the aid surges.

In neither Ethiopia nor Ghana was the aid surge accompanied by an increase in domestic spending in excess of revenue generation. Therefore, over the period as a whole, the aid did not lead to a substantial injection of domestic liquidity. Effectively, where there was a rise in the central bank's net foreign assets, it was sterilized through an accumulation of government deposits at the central bank, by increasing reserve requirements for domestic banks, or by reducing the stock of domestic debt (in Ghana's case). In Ethiopia, the growth rate of reserve money fell substantially during the beginning of the surge period. Inflation was very low when the aid surge commenced, and remained within a 2 to 5 per cent range throughout the aid-surge period. In Ghana, the rate of growth of reserve money declined significantly over its two distinct aid-surge periods. Although this was achieved partly by selling reserves in the 2001 surge, once the currency stabilized further aid inflows were accumulated as reserves. Inflation stood at over 40 per cent per annum when the aid surge began, but had fallen to about 15 per cent by end-2003. A policy geared towards using aid for reserve accumulation largely explains the lack of real appreciation of exchange rate for both countries.

In three countries where fiscal authorities spent the aid but central banks were unwilling to allow full absorption of aid, the question arises as to how they handled the increase in money supply associated with this 'spend-but-do-not-absorb' response. Each of the three countries followed a combination of options: either allowing the money supply to increase or sterilizing monetary expansion through treasury bills. In all three countries,

concerns about the negative impact of a real exchange rate appreciation on competitiveness and negative terms-of-trade shocks led the central banks to contain net foreign exchange sales to a level consistent with a depreciating nominal exchange rate. Because the governments in these countries simultaneously increased domestic expenditures, this injection of liquidity led to inflationary pressures and various episodes of attempted sterilization through treasury bill sales.

In Tanzania and Uganda, the authorities were largely successful in keeping inflation in check, with underlying inflation never exceeding 10 per cent during the aid-surge period. However, in both cases this was achieved at the expense of squeezing private sector investment through the sale of government paper during some periods. In Tanzania, the treasury bill rate rose from 2.6 per cent in September 2002 to 7.6 per cent by end-2003, while in Uganda two episodes of treasury bill sterilization pushed rates to over 20 per cent in early 2001 and end-2003.¹⁰ However, there were considerable year-to-year policy variations in these countries. For example, in Tanzania, an early response focused on sterilizing aid-related liquidity through treasury bill sales was largely abandoned subsequently in favour of allowing the money supply to increase. This latter policy created excess liquidity in the banking system and eventually led to an increase in inflation. Thereafter, the authorities turned towards selling foreign exchange to sterilize the monetary injection associated with aid-related spending, resulting in a sharp rise in aid absorption and some real exchange rate appreciation. In effect, the authorities moved towards a delayed spend-and-absorb strategy.

In Mozambique, despite more aid absorption than the other countries, the large fiscal expansion was also accompanied by more monetary loosening than in the other countries. Reserve money growth shot up from about 7 per cent per annum before the aid surge to 53 per cent in 2001. Inflation followed suit, peaking at well over 20 per cent in early 2002. From 2002 onward, however, the authorities undertook more sterilization through foreign exchange and treasury bill sales, bringing down reserve money growth. In addition, rapid GDP growth led to an increase in the demand for money. Consequently, inflation was brought under 10 per cent by 2003.

Better adherence to *absorb-and-spend response* to aid surge would have reduced the need for sterilization through treasury bills, helping to avoid crowding out private sector investment in Tanzania and Uganda, and reducing inflation in Mozambique. This would have been a more suitable response to the surge in aid inflows because, unlike Ethiopia and Ghana, the level of import coverage afforded by gross reserves was quite high in all three countries.

4 Conclusions and policy implications

Some countries experienced significant macroeconomic constraints in fully absorbing aid. Although there is considerable variation from year to year, on a cumulative basis no country in the sample entirely absorbed the increased level of aid. Absorption ranged

¹⁰ Brownbridge and Tumusiime-Mutebile (2007) document how the sterilization strategy led to a sixfold increase in net sales of government securities. The bulk of the purchases were made by commercial banks, which doubled their ratios of government security holdings to deposits, while their loans to the private sector fell by an almost equivalent amount.

from two-thirds for Mozambique to zero for Ghana and Tanzania. Despite the conjecture that to absorb and spend is generally the best use of aid, no country in the sample systematically pursued this strategy.

There is no evidence in the sample of significant real exchange rate appreciation and hence the problem of Dutch disease as a result of a surge in aid, which is consistent with the pattern of aid absorption noted above. If aid is accumulated in reserves, then there is no need for a real exchange rate appreciation to induce an increase in net imports and thereby absorb the aid. Of course, part of the reason that real appreciation (and consequently, Dutch disease) was not observed is precisely because authorities were concerned with competitiveness and restricted absorption accordingly.

Some countries—Ethiopia and Ghana—saved the increase in aid, neither spending nor absorbing. Both entered the aid-surge period with a precariously low level of reserves and used the additional aid to build those reserves. In Ethiopia, reserves were accumulated to bolster the de facto exchange rate peg against the dollar. In Ghana, a buffer against extremely volatile aid inflows was built.

Other countries—Mozambique, Tanzania and Uganda—failed to use aid to increase net imports at the same time as they increased fiscal spending; they did spend but not absorb. This is potentially the most problematic response to aid surges. It can create high inflation, as it did in Mozambique, or require substantial treasury bill sterilization, and hence high interest rates and increases in domestic debt, to keep inflation in check. However, concerns about the negative impact of a real appreciation on competitiveness dictated this policy response. Thus, the central banks of each country accumulated large international reserves throughout the aid-surge period, despite a relatively comfortable level of import coverage. The fiscal authorities on the other hand spent aid money, possibly because of political pressures. For example, donors may object to having their aid simply saved in government deposits at the central bank. These cases illustrate the risk that policies on spending aid inflows may be inconsistent with policies on exchange rate and monetary management of these same inflows.

Whether the aid surges were inflationary or stabilizing depended on the macroeconomic policy reaction. In Mozambique, Tanzania, and Uganda, aid inflows did create inflationary pressures, because the excess of spending over absorption injected domestic liquidity. In Mozambique, the gap was particularly large, and hence the country experienced high inflation. In Tanzania and Uganda, the inflationary pressures led to various episodes of sterilization through treasury bill sales. Although inflation in these countries was consequently contained below 10 per cent, this came at the cost of rising interest rates, and in Uganda's case, a rapidly rising level of domestic debt. With an absorbed-but-not-spent policy response, aid can help reduce inflation, as was the case in Ethiopia and Ghana in 2001.

The consistency of monetary and exchange rate policy with fiscal policy needs greater attention in cases where the authorities spend but do not absorb the aid. One option would be to limit spending as well, following the pattern of Ghana. This would have the merit of avoiding macroeconomic difficulties while saving the aid for later and would make sense if Dutch disease concerns outweigh the benefits from the absorption of aid inflows. Where aid inflows are volatile, international reserves are too low, or good projects cannot be implemented, reserve accumulation may be the most reasonable short-run response.

Another option is to allow the monetary expansion necessary to accommodate increased expenditures, and accept inflation as the mechanism through which real appreciation occurs. This policy may work well in the short run, especially if a rapid supply response tempers inflation. In the medium term, the incremental domestic expenditures should increase the demand for imports, and the saved foreign exchange then allows the authorities to accommodate this increased import demand without running low on international reserves. This requires some tolerance for a period of higher inflation to achieve the required real appreciation and, critically, a willingness on the part of the central bank to eventually sell foreign exchange as the current account deficit increases. If the central bank fails to defend the nominal exchange rate, inflation will increase without causing real appreciation, which is an inferior response.

Yet another option is to combat inflationary pressures through treasury bill sterilization—an option attempted by most of the countries in the sample (Mozambique, Uganda, and initially, Tanzania). This option is, however, likely to be suboptimal under many circumstances. Again, aid is not absorbed, while domestic public expenditures in conjunction with higher interest rates potentially crowd out private investment. In addition, where monetary expansion has not yet led to higher inflation and the nominal exchange rate remains stable, excessive treasury bill sterilization could prevent delayed absorption. However, sterilization would generally be preferable to inflation as a source of domestic financing (IMF 2005b). Thus, in a country with a given spend-and-not-absorb policy, perhaps politically dictated, where inflation is high or rising, there would be a case for sterilization through treasury bills.

The key long-run strategic choice is whether to use the aid—by absorbing and spending—or not, in which case the aid should be neither absorbed nor spent. The latter choice is equivalent to refusing aid altogether. Other responses should, at most, short run. To spend and not absorb is not a desirable long-run strategy because it implies that aid is serving not to finance additional net imports but to trigger additional domestically-financed spending.

The typical discussion of the monetary management of aid inflows focuses on the question of how to manage the consequences of aid-related spending. Presuming the government necessarily spends the aid receipts, the central bank chooses the appropriate instrument for sterilization—that is, whether to sell foreign exchange causing some real appreciation, or to sell government bonds inducing an interest rate hike. This line of thought leads to the view that central banks need to balance the risks of excessive exchange rate appreciation against excessive interest rate increases and choose some reasonable middle ground. This perspective fails to treat the analysis of monetary and fiscal policy jointly.

When lack of aid spending is an outcome of sectoral and administrative constraints, recipient governments and their development partners should focus on building capacity, particularly at the local government levels. As delivery of services such as education and health is increasingly being assigned to local governments, strengthening of public administration at local level would be important for full and effective spending of aid. In this regard, countries will need to adopt innovative approaches to address human capital constraints (e.g., number of teachers or health workers) in order to expand service provision. Until capacity constraints are properly addressed, some aid could be saved in the short term.

The critical question for aid recipients is how to balance the costs and benefits of absorbing and spending aid. The rate of return to aid-financed investments will likely decline as the rate of investment rises—the best projects should be the first undertaken. Moreover, resources will be drawn out of other uses to implement aid projects, and this will likely become progressively costlier. The implication is that there may be a level of investments beyond which the rate of return will be lower than that achieved in alternative uses. Absorptive capacity has been reached when aid-financed investments do not yield enough to justify the resources used to produce them.

If the judgment is made in a particular situation that the costs of absorbing and spending outweigh the benefits, what is to be done? One possible solution is raise absorptive capacity. It is critical to make expenditures more effective, including by improving project choice and expenditure management, and more broadly the overall policy environment (Bevan 2005). For example, a carefully designed and scaled-up investment programme may raise the rate of return while minimizing the cost for the traded-goods sector. An aid-financed investment programme aimed at improving productivity—via better roads, education, and health—may outweigh the effects of the real exchange rate appreciation (Bourguignon et al. 2005). However, raising absorptive capacity is easier said than done, and the stakes are high: if the aid-related spending turns out not to be effective, not only is the aid wasted, but scarce domestic resources were misallocated and the traded-goods sector shrunk.

Another option is spending aid directly on noncompetitive imports, and thereby creating fewer tensions with an export-led growth strategy. For example, using aid to import factors of production used in the export sector (e.g., chemical fertilizer) would not tend to create pressure on the real exchange rate.

Yet another possibility is to save the aid until it can be effectively used. This would imply accumulating reserves and not increasing the budget deficit. However, this solution has two major problems. First, it is politically hard to limit government spending of the local currency counterpart to the aid inflows—after all, the aid has been given and the needs are great. This would lead to the spend-and-not-absorb policy denigrated previously. Second, a country that saves aid inflows in this fashion would alienate donors, who might decide to reallocate the aid to a more eager recipient.

The countries covered in this study had by the end of the period under review built reserves to levels adequate to meet their needs for shocks, such as to the terms-of-trade and aid. In this context, further reserve accumulation becomes more unattractive and the risk increases that what had been a latent Dutch disease problem becomes real. The role of an investment programme aimed at improving productivity becomes even more critical in this situation.

Donors can help resolve some of these tensions by improving the quality of aid. Aid that is less tied and creates less burden on limited administrative capacity in the recipient country would be more useful. Similarly, aid that is more predictable, and in particular that can be relied on over the medium term, can be spent and absorbed more effectively. Also, aid that buffers temporary negative shocks may be more readily used, insofar as stabilization of the exchange rate and aggregate demand in the face of a temporary contraction would not tend to raise competitiveness concerns. At the same time, the authorities in aid-recipient countries must balance a complex set of objectives involving fiscal policy and exchange rate and reserve management. But one message is simple: *a*

given aid dollar can be used to build reserves or to finance the fiscal deficit, but not both. The cases reviewed in this paper suggest that trying to do so may make aid less effective.

References

- Adam, C., S. O'Connell, E. Buffie, and C. Patillo (2007). 'Monetary Policy Rules for Managing Aid Surges in Africa'. IMF Working Paper 07/180. Washington, DC: International Monetary Fund.
- Arellano, C., A. Bulir, T. Lane, and L. Lipschitz (2005). 'The Dynamic Implications of Foreign Aid and its Variability'. IMF Working Paper 05/119. Washington, DC: International Monetary Fund.
- Berg, A., S. Aiyar, M. Hussain, S. Rpatche, T. Mirzoev, and A. Mahone (2007). 'The Macroeconomics of Scaling Up Aid: Lessons from Recent Experience'. IMF Occasional Paper 253. Washington, DC: International Monetary Fund.
- Bevan, D. L. (2005). 'An Analytic Overview of Aid Absorption: Recognizing and Avoiding Macroeconomic Hazards'. Paper presented at the Seminar on Foreign Aid and Macroeconomic Management, March 14-15. Maputo.
- Bourguignon, F., H. Lofgren, M. Bussolo, H. Timmer, and D. van der Mensbrugghe (2005). 'Building Absorptive Capacity to Meet the MDGs'. Washington, DC: World Bank. Mimeo.
- Brownbridge, M., and E. Tumusiime-Mutebile (2007). 'Aid and Fiscal Deficits: Lessons from Uganda on the Implications for Macroeconomic Management and Fiscal Sustainability'. *Development Policy Review*, 25 (2): 193-213.
- Buffie, E., C. S. Adam, S. O'Connell, and C. Patillo (2004). 'Exchange Rate Policy and the Management of Official and Private Capital Flows in Africa'. *IMF Staff Papers*, 51: Special Issue.
- Bulir, A., and J. Hamann (2003). 'Aid Volatility: An Empirical Assessment'. *IMF Staff Papers*, 50 (1): 64-89.
- Bulir, A., and J. Hamann (2006). 'Volatility of Development Aid: From the Frying Pan into the Fire?'. IMF Working Paper 06/65. Washington, DC: International Monetary Fund.
- Chowdhury, A., and T. McKinley (2006). 'Gearing Macroeconomic Policies to Manage Large Inflows of ODA: Implications for HIV/AIDS Programmes'. IPC Working Paper 17. Brazilia: International Poverty Centre.
- Foster, M., and T. Killick (2006). 'What Would Doubling Aid Do for Macroeconomic Management in Africa?'. ODI Working Paper 264. London: Overseas Development Institute.
- Gupta, S., B. Clements, A. Pivovarsky, and E. R. Tiongson (2003) 'Foreign Aid and Revenue Response: Does the Composition of Aid Matter?'. IMF Working Paper, 03/176. Washington, DC: International Monetary Fund.

- IMF (International Monetary Fund) (2005a), 'The Macroeconomics of Managing High Aid Inflows'. IMF Policy Paper (August). Available at: www.imf.org/external/np/pp/eng/2005/080805a.pdf
- IMF (2005b). 'Update on the Assessments and Implementation of Action Plans to Strengthen Capacity of HIPC's to Track Poverty-Reducing Public Spending'. Washington, DC: International Monetary Fund. Mimeo.
- IMF (2007). The Macroeconomics of Scaling Up Aid: Lessons from Recent Experiences'. Occasional Paper 253. Washington, DC: IMF.
- Keynes, J. M. (1929) 'The German Transfer Problem'. *Economic Journal*, 39 (March): 1-7.
- McGillivray, M., and O. Morrissey (2001). 'Fiscal Effects of Aid'. WIDER Discussion Paper 2001/61. Helsinki: UNU-WIDER.
- Milesi-Ferreti, G. M., and P. R. Lane (2004). 'The Transfer Problem Revisited: Net Foreign Assets and Real Exchange Rates'. *Review of Economics and Statistics*, 86 (4): 841-57.
- Prati, A., and T. Tresselt (2006). 'What Monetary Policy for Aid-Receiving Countries?'. DESA Working Paper 12. New York: UN-DESA.
- Rajan, R., and A. Subramanian (2005). 'What Undermines Aid's Impact on Growth?'. IMF Working Paper 05/126. Washington, DC: International Monetary Fund.
- United Nations Millennium Project (2005). *Investing in Development: A Practical Plan to Achieve the Millennium Development Goals*. New York: United Nations Development Programme.